

## MALNUTRITION, A CRISIS IN INDIA – CURRENT SCENARIO OF ACUTE MALNUTRITION IN CHILDREN BELOW 5 YEARS AND STRATEGIES TO BOOST THE COMBAT AGAINST MALNUTRITION

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### APSTRACT

Adequate nutrition is an important part of human development. Child malnutrition is a major national and international public health problem with consequences for both individuals and society. The data from National Family Health Survey 5 (NFHS 5) which was collected in the second half of 2019 covering 17 states and 5 Union Territories depicts that between 2015 and 2019, several states have witnessed an increase in the cases of child malnutrition. According to the Global Nutrition Report 2020, India is set to have the highest inequalities in malnutrition among 88 countries and it will miss the global nutrition targets by 2025. India has 94<sup>th</sup> rank amongst 107 countries in the Global Hunger Index 2020 and lies in the 'Serious' category. The economic crisis that has resulted due to Covid-19 is also one of the reasons for the increase in the death rate of children, especially in economically backward states and rural areas. Hence, to boost the combat against malnutrition and to break the lifelong and life-threatening cycle of malnutrition a three-pronged strategy is suggested.

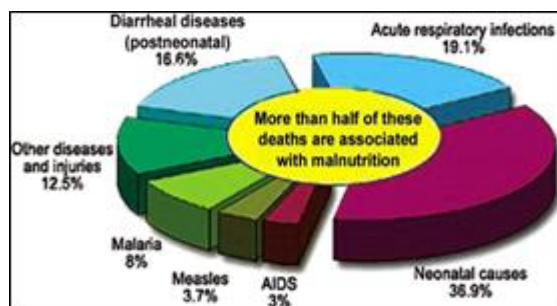
**KEYWORDS:** Weight Monitoring, Malnutrition Treatment Centre (MTC), vaccination, nutritious food, age appropriate, Poshan Abhiyaan.

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### INTRODUCTION

Adequate nutrition is an important part of human development. Malnutrition is defined as the pathological state resulting from the insufficiency of one or more essential elements in diet [1]. Acute malnutrition is caused by a decrease in food consumption and/or illness resulting in bilateral pitting oedema or sudden weight loss (wasting) [2]. According to WHO child malnutrition is a major international public health problem with consequences for both individuals and societies [3]. Children suffering from malnutrition are highly susceptible to illness and severely acutely malnourished children are at a greater risk of medical complications and death.

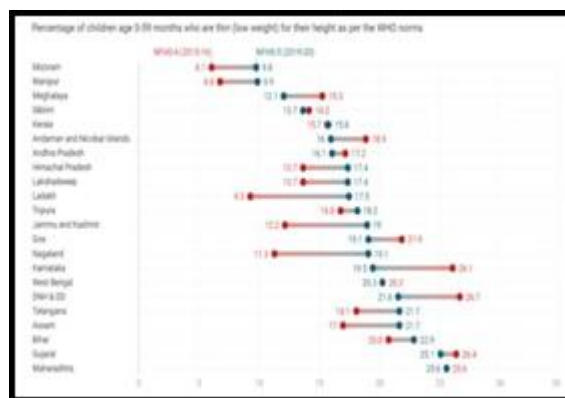
Figure 1, shows that malnutrition increases the risk and worsens the severity of infections [4].



Source: (Muller and Krawinkel, 2005) [4]

**Figure 1: Causes of death among children under 5 years of age, 2000–2003, worldwide.**

Although malnutrition affects all age groups, it is more frequent among infants and young children; it is linked to increased risk of death in children and reduces the learning ability, school performance and retention rate [5]. Malnutrition consists of undernutrition and overnutrition and also refers to when an individual's diet is not provided with enough nutrients to attain optimum health. Its cause leads to inappropriate dietary choices, difficulty in obtaining food, low income, physical and mental development. Nutrition outcomes also vary to a larger extent as India is home to 34.7 per cent of stunted children less than 5 years of age where the wasting is nine times higher than other countries and stunting is three times higher than overweight.



Source: NFHS-5 (2019-20) and NFHS-4 (2015-16) [6]

**Figure 2: Change in Proportion of Wasted Children by states/UTs of India, 2015-16 to 2019-20**

Red and blue circles, respectively, denote the values in the years 2015-16 and 2019-20. The chart includes 22 states and UTs surveyed in the first phase of NFHS-5

The data from National Family Health Survey 5 (NFHS 5) which was collected in the second half of 2019 covering 17 states and 5 Union Territories depicts (Figure-2) that between 2015 and 2019 several states have witnessed an increase in the cases of child malnutrition [6]. There is a direct relationship between infant and young child feeding practices as continuous breastfeeding up to 2 years of age is less common for urban areas where mothers are educated and working. In case of solid food, introduction with minimum diet diversity is lower in poor households as in rural areas mothers are less educated. According to the Global Nutrition Report 2020, India is set to have the highest inequalities in malnutrition among 88 countries and it will miss the global nutrition targets by 2025. India is highlighted as third among the three worst countries along with Nigeria and Indonesia. Among children less than 5 years of age, 37.9 percent are stunted followed by 20.8 percent who are wasted [7].

The COVID-19 pandemic has crippled health systems, exacerbated household food insecurity and reversed economic growth. The World Vision India, well-being report 2020, states that the disruptive effects of the COVID-19 pandemic have increased the burden of malnutrition among children and according to the report 115 million children are at risk of malnutrition. During this pandemic, the health and nutrition services have been impacted badly as there were strict regulations like lockdown in the country and also household income was affected, schools were closed and some children were not having their meals as the mid-day meals were closed [8].

The Government of India, state governments, the UN and many NGOs have numerous programmes to address the issue of malnutrition. Government programmes include ICDS, Mid-Day-Meal, TPDS, MGNREGA, NHM and the Poshan Abhiyaan. [9]. Some of these programmes are old and some are very new. Despite these programmes, rates of undernutrition

in India remain worryingly high [10]. Methods and Discussion Despite various government schemes and interventions, malnutrition remains a major health concern for India's children. According to The State of the World's Children 2019 report, the primary reason behind 69 per cent of deaths of children below five years in India was malnutrition, it also says that every second child in India is suffering from some or other form of malnutrition [11]. India has 94<sup>th</sup> rank amongst 107 countries in the Global Hunger Index 2020 and lies in the 'Serious' category. This puts the country even below Bangladesh, Myanmar, Nepal, Pakistan and Sri Lanka and the situation is indeed very grave [12]. The economic crisis that has resulted due to Covid-19 is also one of the reasons for the increase in death rate of children especially in economically backward states and rural areas. At the same time during the period of lockdown children were deprived of the take home ration and hot cooked meals that were served in Aanganwadi centres and schools. Similarly, the monthly weight monitoring done at the Aanganwadi centres was also hampered and as a result, the timely identification of acute malnutrition could not be done which further led to the delayed referral of severe cases to Malnutrition Treatment Centres. It was also observed that some parents even after referral did not admit their children to the MTC owing to the fear of Coronavirus infection which they or their children may get during a hospital stay.

A large chunk of the society is indifferent to the problem of malnutrition and therefore there is an urgent need to take important steps to break this cycle of malnutrition which is not just confined to a particular age group but is a result of malnutrition throughout the life cycle stages. Hence, to boost the combat against malnutrition and to break the lifelong and life-threatening cycle of malnutrition a three-pronged strategy is suggested in this article: **First-Focus on 1000 days:** This is the time which starts from conception and lasts up to two years of age after the birth of a child. When we talk of conception, we need to keep in mind the right age of marriage for a girl and a boy. Right age during marriage is important for the married couple to be prepared physically and mentally for starting a family. Family planning is the next step followed by ensuring proper health and nutrition status of the expecting mother even before conception, this is almost like preparing the soil for farming before putting in seeds to ensure a good yield. Then, during pregnancy regular weight monitoring should be done, vaccinations should be completed, and all the important medical services should be provided. Although nutrition counselling is a part of the essential services to be provided to pregnant and lactating women, but it is usually observed that the quality of counselling is very poor. It is more generalized with just the provision of basic tips for healthy eating. For example: Eat 5-6 times a day, eat green leafy vegetables, eat fruits, etc. Now, here there is a need to understand that during pregnancy the food choices of a female usually change and she develops an aversion for certain kind of foods and so it becomes all the more important to counsel her in a way that she can make smart selections from the locally available foods. During childbirth/delivery delayed cord clamping should be ensured to decrease the chances of the newborn getting anaemic. The newborn should be made to breastfeed as soon as possible and exclusive breastfeeding should be ensured up to 6 months of age. Data from various sources show that though institutional delivery has increased in the country still the percent of children breastfed within one hour of delivery is very low. This calls for actions to promote early breastfeeding, and one of the most effective ways is counselling of the family of the pregnant women regarding the benefits of early and exclusive breastfeeding, as they are the first support system besides the medical staff during the time of delivery. After 6 months, age-appropriate complementary feeding should start along with continued breastfeeding up to 2 years. Delayed start of complementary feeding is also one of the major causes of malnutrition in children after 6 months of age. Mother/ caregiver should be educated well before time about the kind of foods to be introduced for complementary feeding, the consistency of feed, the amount and the frequency. Along with this regular weight monitoring of the child should be done to see if the child is growing well or not and complete vaccination should also be confirmed.

**Second-Focus on age group 6 months to 5 years:** This age group is most affected by severe acute malnutrition which is the worst form of malnutrition. Children in this age group should be fed with age-appropriate nutritious food. Care should be taken while feeding these children as this is the right time to inculcate good feeding habits and practices among children. This will help them in making correct food choices in the future and increased their chances of not getting attracted to junk food. A positive and caring family environment is vital for a child's growth and development. A stressful environment can cause loss of appetite or binge eating and both situations are harmful leading to childhood malnutrition. If any child in this age group is found to be severely acute malnourished s/he should be immediately referred to the nearest Malnutrition Treatment Centre. Most of the acute malnourished children (around 90 percent) can be taken care of at the community or household level with either locally available or home-based nutritious food or by therapeutic food like RUTF and proper care at home.

Mother and Child Protection card (MCP card) is one important tool in which all the information related to health and nutrition is recorded. It consists of useful messages too, which provide a lot of information regarding health, nutrition and general care of mother and child up to 5 years of age. Hence, efforts should be made to promote the optimum utilization of this tool.

**Third-Focus on age group 6 years up to adolescence:** Not much attention has been paid to the health and nutrition status of this particular age group and therefore very less data on this group is available. In today's times this group is hit hard by the triple burden of malnutrition, be it undernutrition, overnutrition or micronutrient deficiency. Because these young people get easily attracted towards advertisements, peer pressure pertains and there is a desire to attract attention; they simply fall for junk food as a choice. The trend is not just seen in cities and affluent families but can also be seen in rural areas with children from even the lowest socio-economic background being able to get access to unhealthy food. We should not forget that these children/adolescents are going to become adults one day and in absence of good food and nutrition their growth and development will be compromised. To promote good nutrition practices, it is important to make nutrition education a compulsory part of the school and college curriculum. If timely actions are not taken then it will be difficult to break the cycle of malnutrition.

Along with the above-mentioned strategy the following points are also important to be considered:

- Use of IEC and social media to educate masses about the effects of malnutrition, its causes, identification, prevention and treatment. Along with this information related to good nutrition should also be given. And all this needs to be attractive and effective so that the masses get diverted towards correct choices and information and utilize it to attain improved health and nutrition for a better life.
- Food fortification should be promoted. Globally more than 2 billion people suffer from micronutrient deficiencies, these micronutrients are essential for survival and good health and the impact of deficiency may be devastating. Fortification helps in providing those micronutrients to the body which are otherwise lacking or are not enough as per the requirement in the daily diet. It is a proven, sustainable, cost effective and high-impact solution to address micronutrient deficiencies. If staple foods such as wheat, rice, salt, oil, milk and pulses are fortified with micronutrients, then a large population group can be reached. And therefore, staple food fortification should be made compulsory throughout the country. Biofortification is also very helpful in combating malnutrition and there are many examples from across the globe for the positive outcomes of biofortification. The concept is simple where biofortified seeds are used for producing nutrient dense crop varieties. For countries like India with large population fortification

and biofortification can be a faster, sustainable and cost-effective solution to achieve Sustainable Development Goal of achieving good health and ending hunger by 2025.

- Diet diversity is an important aspect which is really important to improve the quality of diet specially in the Indian context where the diet mostly comprises of vegetarian food sources. Deficiency of protein and micronutrients is very common in the country and therefore inclusion of various sources of proteins to provide different amino acids in required amounts and the use of wide variety of fruits and vegetables for the provision of micronutrients is a must. Besides this cereal grain diversity is also important as today the diets are mostly wheat and rice based. In earlier times our ancestors used to follow a varied diet pattern according to season, climate, festivals and other occasions. But today though we have the knowledge we have left the practice mainly due to our busy schedules and also because of availability of all kinds of foods round the year. Like earlier people used to have more buttermilk, sattu, oats in the summer season and winters were the season for jaggery, groundnut, sesame, pearl millets etc, but now round the year, we are consuming almost the same kind of food. Many regional and seasonal fruits and vegetables like Jamun, Phalsa, Ber, Guava, Tamarind, kair, Chane ke patte (Bengal gram leaves), carrot greens, Colocasia leaves, Babool kiphali (Acacia pods) and many more, are not used in the way they were used earlier. So, there is also a need to look back to our own traditional eating patterns and learn from them. There should be variety in a daily meal and it should be more colourful with the inclusion of foods of different colours for eg: Red- tomato and carrot, Yellow- Papaya and Mango, Green- Okra (Ladyfinger) and Spinach, White- Milk and Rice and so on. Now it's also important to understand that we need to include more foods from seasonal and locally available varieties. This also is cost effective as today there is a trend of including more exotic varieties which are not local to our geography and are costly too, though they are nutritious and may be used as a healthy choice but when we talk of sustainable solutions for larger populations local varieties are always more beneficial and are also time-tested choices for our genetic type.
- Home kitchen garden is an excellent way of growing one's own food where in vegetables etc. can be grown in the backyard or pots. Although the government is already promoting home kitchen garden, they also need to provide good quality low-cost seeds and other material for the purpose. Educative information on how to grow a home kitchen garden should also be given through various media.
- Nutrition is an integral part of health and one cannot talk of good health without good nutrition. Nutrition contributes to almost 70 percent for attaining good health. Therefore, it is also essential for health professionals to have at least basic knowledge of nutrition, and hence the medical and nursing curriculum should have nutrition as one of the essential subjects. Similarly, in case of disease or hospital stay good diet plays a vital role and not just the private hospitals and facilities but even the government hospitals and facilities should have dieticians and nutrition counsellors to expand reach to the masses.

## CONCLUSIONS

The COVID-19 pandemic poses a serious challenge to achieving many of the SDGs, including the nutrition targets. Just when the nutrition community was looking to accelerate investment, global economies have contracted and timelines for recovery remain uncertain. However, there is cause for some optimism because many countries have prioritised food and nutrition security in their COVID-19 mitigation strategies [13, 14].

The facts and discussion presented above, highlight the high prevalence and universality of malnutrition, as its

impact on social and economic development is beyond health. The important factors like low birth weight, poverty, maternal health, illiteracy, dietary practices, diseases and poor hygienic conditions are reasons for high prevalence of malnutrition. The government of India has various nutrition programs, which are now under the umbrella of Poshan Abhiyaan to combat malnutrition. Most of the above-mentioned strategies and points are already a part of the Poshan Abhiyaan, but it is seen in the past few years that there is not much change even after such a vast campaign. The planning is excellent but the implementation is poor. There is a need for a robust system for efficient management and monitoring of the program. With greater awareness and understanding of the fundamental role that food and nutrition systems play in health, livelihoods, and the environment, we need all actors to play a role in this response.

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